

Claims

1. A semiconductor element, comprising a nitride semiconductor layer, an electrode connected to said nitride semiconductor layer, and an insulating film covering at least part of said electrode,

wherein the electrode comprises:

a first metal film including silver or a silver alloy and in contact with the nitride semiconductor layer; and

a second metal film completely covering the first metal film, and the insulating film comprises a nitride film.

2. A semiconductor element, comprising a nitride semiconductor layer, an electrode connected to said nitride semiconductor layer, and an insulating film covering at least part of said electrode,

wherein the electrode comprises:

a first metal film including silver or a silver alloy and in contact with the nitride semiconductor layer; and

a second metal film formed so as to prevent the silver from moving across the surface of the nitride semiconductor layer, and

the insulating film comprises a nitride film.

3. The semiconductor element according to Claim 1 or 2, wherein the nitride film is formed from either silicon nitride or silicon oxynitride.

4. The semiconductor element according to any of Claims 1 to 3, wherein the first metal film is a single crystal at least at the interface with the nitride semiconductor layer.

5. The semiconductor element according to any of Claims 1 to 4, wherein the first metal film includes a film comprised of silver or a silver

alloy, and a nickel film disposed between said silver film and the nitride semiconductor layer.

6. The semiconductor element according to any of Claims 1 to 5, wherein the second metal film is comprised of a metal that inhibits a reaction with silver at least in the region in contact with the first metal film.

7. The semiconductor element according to any of Claims 1 to 6, wherein the first metal film is formed from a multilayer film including a film comprised of silver or a silver alloy, and a metal film that inhibits a reaction with silver and is disposed over said silver film.

8. The semiconductor element according to any of Claims 1 to 7, wherein the second metal film comprises a metal selected from the group consisting of nickel (Ni), ruthenium (Ru), osmium (Os), iridium (Ir), titanium (Ti), vanadium (V), niobium (Nb), tantalum (Ta), cobalt (Co), iron (Fe), chromium (Cr), and tungsten (W) and disposed at least in the region in contact with the first metal film.

9. The semiconductor element according to any of Claims 1 to 8, wherein at least the region of the second metal film that is in contact with the first metal film is formed from nickel.

10. The semiconductor element according to any of Claims 1 to 10, wherein the nitride semiconductor layer is made up of a nitride semiconductor layer of a first conduction type, a light emitting layer, and a nitride semiconductor layer of a second conduction type that is different from that of the nitride semiconductor layer of the first conduction type, in that order, and an electrode connected to the nitride

semiconductor layer is a second electrode connected to the semiconductor layer of the second conduction type.

11. The semiconductor element according to Claim 10, wherein the nitride semiconductor layer of the first conduction type is an n-type semiconductor layer, and the nitride semiconductor layer of the second conduction type is a p-type semiconductor layer.